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EXAMINER	
MATTIS, JASON E	
ART UNIT	**PAPER NUMBER**
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/694,766	Applicant(s) GRINDAHL ET AL.
	Examiner Jason E. Mattis	Art Unit 2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 60-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 60-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the amendment filed 8/30/06. Claims 1-16 and 60-65 are currently pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers et al. (U.S. Pat. 5867485) in view of *Design of a 100 MBPS Wireless Local Area Network* by Engels et al. from URSI Symposium on Signals, Systems, and Electronics Issue 98, 1998 and in further view of Schreiber et al. (U.S. Pat. 5425050).

With respect to claim 9, Chambers et al. discloses a wireless access system comprising an outdoor base station unit, remote node transceiver 14, that includes a network interface, fiber optic links 12 **(See column 6 lines 1-8 and items 12 and 14 in Figure 2 for reference to remote node transceiver 14, which is an outdoor base station including a fiber optic link 12)**. Chambers et al. also discloses a radio frequency interface and a switch capable of switching an information packet to the base

station, remote node transceiver 14, from the network, fiber optic network, and from the base station to the network **(See column 6 line 1 to column 7 line 51 and Figure 3 of Chambers et al. for reference to radio frequency transmit and receive antennas, which are capable of transmitting and receiving data packets via radio frequency and for reference to fiber optic receivers, which inherently includes a packet switch, for sending and receiving packets to and from the fiber optic network).** Chambers et al. further discloses a customer premise equipment, subscriber station, including a host interface, network interface unit 60, and an antenna **(See column 7 line 54 to column 8 line 21 and Figures 4 and 5 of Chambers et al. for reference to the subscriber station containing an indoor NIU 60 and an antenna).** Chambers et al. also discloses a second radio frequency interface and a second switch to send and receive packets between the host, subscriber, equipment and the radio frequency interface **(See column 7 line 54 to column 9 line 57 and Figures 4 and 5 of Chambers et al. for reference to a roof mounted radio frequency antenna and its equipment, which transfers packets from the antenna to the subscriber equipment as well as from the subscriber equipment to the antenna, and which must include a packet switch to be able to perform the function of sending data to and from the host equipment using NIU 60).** Chambers et al. further discloses using orthogonal frequency division multiplexing to transmit and receive packets **(See column 4 lines 37-48 of Chambers et al. for reference to using OFDM).** Chambers et al. does not disclose that the second radio frequency interface enables indoor non-line-of-

sight radio frequency transmission. Chambers et al. also does not disclose the radio frequency transmission having a range between 1-10 miles.

With respect to claim 9, Engels et al. discloses a wireless communication system using OFDM in which indoor non-line-of-sight antennas are used for radio transmissions in an indoor environment **(See the abstract and introduction sections of Engels et al. for reference to an OFDM indoor communication system that uses non-line-of-sight transmissions to base stations)**. Using an OFDM wireless communication system in which non-line-of-sight antennas are used for radio transmission in an indoor environment has the advantage of allowing transmitters to be more flexibly placed without having to provide a line-of-sight between the transmitters and the base stations.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Engels et al. to combine using an OFDM wireless communication system in which non-line-of-sight antennas are used for radio transmission in an indoor environment, as suggested by Engels et al., with the system and method of Chambers et al., with the motivation being to allow transmitters to be more flexibly placed without having to provide a line-of-sight between the transmitters and the base stations.

With respect to claim 9, Schreiber et al., in the field of communications, discloses a base station having a transceiver transmitting with enough power such that the transmission radius is more than one mile and less than ten miles **(See column 13 line 58 to column 14 line 17 and Figure 8 of Schreiber et al. for reference to cell**

coverage areas being several miles across to provide an acceptable signal to noise ratio as shown in Figure 8). Using a base station having a transceiver transmitting with enough power such that the transmission radius is more than one mile and less than ten miles has the advantage of providing a larger coverage area than a lower power transceiver such that signals may be sent and received over a greater distance.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Schreiber et al., to combine using a base station having a transceiver transmitting with enough power such that the transmission radius is more than one mile and less than ten miles, as suggested by Schreiber et al., with the system and method of Chambers et al. and Engels et al., with the motivation being to provide a larger coverage area than a lower power transceiver such that signals may be sent and received over a greater distance

With respect to claim 10, Chambers et al. discloses that the host is either a single host computer or a network of host computers **(See column 9 lines 23-39 and item 64 of Figure 4 for reference to the host being a computer)**.

With respect to claim 11, Chambers et al. discloses that the radio frequency interfaces operates in the 2.5-2.686 GHz range **(See column 2 lines 62-64 of Chambers et al. for reference to operating in frequency ranges of 2150-2162 MHz and 2500-2686 MHz)**.

With respect to claim 12, Chambers et al. that the network and host interface comprise an Ethernet interface **(See column 9 line 23-39 and item 64 of Figure 4 of**

Chambers et al. for reference to using Ethernet, which inherently means there must be an Ethernet interface in the NIU 60 and the PC 64).

4. Claims 60-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers et al. in view of Schreiber et al. and in further view of Martinez (U.S. Pat. 5550579).

With respect to claim 60, Chambers et al. discloses a wireless system with a plurality of computer premise equipment units, subscriber stations 16, and a plurality of base station units, remote node transceivers 14, with the CPEs communicate with the base stations using radio frequency **(See column 4 line 64 to column 5 line 9 and items 14 and 16 in Figure 1 for reference to remote node transceivers 14 communicating with subscriber stations 16 using radio frequency energy).** Chambers also discloses that the base station units are arranged in a sectorized configuration **(See column 7 lines 1-4 and Figure 1 of Chambers et al. for reference to the remote node transceivers 14 having sectors).** Chambers et al. does not disclose a coverage area for a base station having a radius of more than one mile and less than 10 miles. Chambers et al. does not disclose communicating with at least 250 CPE units in each sector.

With respect to claim 60, Schreiber et al., in the field of communications, discloses a base station having a transceiver transmitting with enough power such that the transmission radius is more than one mile and less than ten miles **(See column 13 line 58 to column 14 line 17 and Figure 8 of Schreiber et al. for reference to cell**

coverage areas being several miles across to provide an acceptable signal to noise ratio as shown in Figure 8). Using a base station having a transceiver transmitting with enough power such that the transmission radius is more than one mile and less than ten miles has the advantage of providing a larger coverage area than a lower power transceiver such that signals may be sent and received over a greater distance.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Schreiber et al., to combine using a base station having a transceiver transmitting with enough power such that the transmission radius is more than one mile and less than ten miles, as suggested by Schreiber et al., with the system and method of Chambers et al., with the motivation being to provide a larger coverage area than a lower power transceiver such that signals may be sent and received over a greater distance.

With respect to claim 60, the number of CPE units allowed to communicate with each sector of the system is a design choice made by architect of the system. Although Chambers et al. does not disclose at least 250 CPEs communicating in each sector, it would be an obvious extension to increase the amount of CPEs in each sector in a trade off with the bandwidth available to each of the CPEs. Martinez, in the field of communications, discloses a wireless sector with at least 250 CPEs communicating **(See column 6 lines 52-67 of Martinez for reference to a cell having a few hundred subscribers, which fall in the range of at least 250).** Using a wireless sector with at

least 250 CPEs communicating has the advantage of allowing more users to communicate in each sector according to system design choices.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Martinez, to combine using a wireless sector with at least 250 CPEs communicating, as suggested by Martinez, with the system and method of Chambers et al., and Schreiber et al., with the motivation being to allow more users to communicate in each sector according to system design choices.

With respect to claim 61, Chambers et al. discloses that the sectorized configuration is maintained in a cellular configuration **(See column 7 lines 1-12 of Chambers et al. for reference to the sectors being in a cellular configuration)**.

With respect to claim 62, Chambers et al. discloses that there can be six sectors per cell **(See column 7 lines 1-4 of Chambers et al. for reference to there being at least 3 sectors, which includes the possibility of six sectors)**.

With respect to claim 63, Chambers et al discloses that the cellular configuration has a 1:1 reuse pattern **(See column 7 lines 12-25 of Chambers et al. for reference to frequency reuse factors of one)**.

5. Claims 1, 5-6, 8, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers et al. in view of Schreiber et al. and in further view of Engels et al.

With respect to claim 1, Chambers et al. discloses a microcellular network operating in a frequency range of less than 10 GHz **(See column 2 lines 62-64 of Chambers et al. for reference to operating in frequency ranges of 2150-2162 MHz**

and 2500-2686 MHz). Chambers et al. also discloses a plurality of base stations, remote node transceivers 14 **(See column 4 line 64 to column 5 line 9 and Figure 1 of Chambers et al. for reference to remote node transceivers 14)**. Chambers et al. further discloses communicating using OFDM on a set of frequency channels **(See column 4 lines 38-47 of Chambers et al. for reference to using OFDM)**. Chambers et al. further discloses a plurality of consumer premise equipment, subscriber stations 16, assigned to base stations and located in the coverage are of the base stations **(See column 4 line 64 to column 5 line 9 and Figure 1 of Chambers et al. for reference to subscriber stations 16 in the coverage area of remote node transceivers 14)**. Chambers et al. does not disclose the base stations having a coverage area between 1 and 10 miles. Chambers et al. also does not disclose the consumer premise equipment having an antenna deployed internally within the premise where the CPE is located.

With respect to claim 64, Chambers et al. discloses a microcellular network operating in a frequency range of less than 10 GHz **(See column 2 lines 62-64 of Chambers et al. for reference to operating in frequency ranges of 2150-2162 MHz and 2500-2686 MHz)**. Chambers et al. also discloses a plurality of base stations, remote node transceivers 14 **(See column 4 line 64 to column 5 line 9 and Figure 1 of Chambers et al. for reference to remote node transceivers 14)**. Chambers et al. further discloses the base stations having transmitters communicating using OFDM on a set of frequency channels **(See column 4 lines 38-47 of Chambers et al. for reference to using OFDM)**. Chambers et al. further discloses a plurality of consumer premise equipment, subscriber stations 16, assigned to base stations, having receivers

to receive communications from the base stations, and located in the coverage area of the base stations **(See column 4 line 64 to column 5 line 9 and Figure 1 of Chambers et al. for reference to subscriber stations 16 in the coverage area of remote node transceivers 14)**.

With respect to claim 8, Chambers does not disclose that the base station provides a signal to noise ration of at least 5 dB.

With respect to claims 1, 8, and 64, Schreiber et al., in the field of communications, discloses a base station having a transceiver transmitting with enough power such that the transmission radius is more than one mile and less than ten miles and a signal to noise ratio of at least 5dB **(See column 13 line 58 to column 14 line 17 and Figure 8 of Schreiber et al. for reference to cell coverage areas being several miles across to provide an acceptable signal to noise ratio as shown in Figure 8 with a signal to noise ratio when using a radius between 1 and 10 miles being 56 dB, which is more than 5dB)**. Using a base station having a transceiver transmitting with enough power such that the transmission radius is more than one mile and less than ten miles has the advantage of providing a larger coverage area than a lower power transceiver such that signals may be sent and received over a greater distance.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Schreiber et al., to combine using a base station having a transceiver transmitting with enough power such that the transmission radius is more than one mile and less than ten miles, as suggested by Schreiber et al., with the system and method of Chambers et al., with the motivation being to provide a

larger coverage area than a lower power transceiver such that signals may be sent and received over a greater distance.

With respect to claims 1 and 64, Engels et al. discloses a wireless communication system using OFDM in which non-line-of-sight antennas are used for radio transmissions in an indoor environment **(See the abstract and introduction sections of Engels et al. for reference to an OFDM indoor communication system that uses non-line-of-sight transmissions to base stations)**. Using an OFDM wireless communication system in which non-line-of-sight antennas are used for radio transmission in an indoor environment has the advantage of allowing transmitters to be more flexibly placed without having to provide a line-of-sight between the transmitters and the base stations.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Engels et al. to combine using an OFDM wireless communication system in which non-line-of-sight antennas are used for radio transmission in an indoor environment, as suggested by Engels et al., with the system and method of Chambers et al. and Schreiber et al., with the motivation being to allow transmitters to be more flexibly placed without having to provide a line-of-sight between the transmitters and the base stations.

With respect to claim 5, Chambers et al. discloses using an ALOHA medium access scheme **(See column 8 lines 48-50 of Chambers et al for reference to connection management being handled by a slotted aloha protocol).**

With respect to claim 6, Chambers et al. discloses each base station, remote node transceiver 14, including less than 10 sector-oriented antennas **(See column 7 lines 1-4 of Chambers et al. for reference to having at least 3 radiating sectors, which inherently must have at least 3 sector-oriented antennas)**. Chambers et al. also discloses each sector-oriented antenna using a different set of channels **(See column 7 lines 1-12 of Chambers et al. for reference to sectors using cross polarization between adjacent cells, which implies that each sector uses a separate set of frequency channels to prevent interference).**

6. Claims 2-3 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers et al. in view of Schreiber et al. and Engel et al. as applied to claims 1,

5-6, and 64 above, and further in view of *Adaptive Antennas for OFDM* by Vook et al. from Vehicular Technology Conference, 48^{th} IEEE Ottawa, Canada.

With respect to claim 2, the combination of Chambers et al. Schreiber et al. and Engel et al. does not disclose a bit error rejection rate of 10x10^-6.

With respect to claim 65, Chambers et al. discloses a microcellular network operating in a frequency range of less than 10 GHz **(See column 2 lines 62-64 of Chambers et al. for reference to operating in frequency ranges of 2150-2162 MHz and 2500-2686 MHz)**. Chambers et al. also discloses a plurality of base stations, remote node transceivers 14 **(See column 4 line 64 to column 5 line 9 and Figure 1 of Chambers et al. for reference to remote node transceivers 14)**. Chambers et al. further discloses communicating using OFDM on a set of frequency channels **(See column 4 lines 38-47 of Chambers et al. for reference to using OFDM)**. Chambers et al. further discloses a plurality of consumer premise equipment, subscriber stations 16, assigned to base stations and located in the coverage are of the base stations **(See column 4 line 64 to column 5 line 9 and Figure 1 of Chambers et al. for reference to subscriber stations 16 in the coverage area of remote node transceivers 14).** Having a required signal to noise ratio increase as a level of modulation increases is an inherent trait of all OFDM wireless communications systems. Chambers et al. does not disclose the base stations having a coverage area between 1 and 10 miles. Chambers et al. also does not disclose the consumer premise equipment having an antenna deployed internally within the premise where the CPE is located. Chambers et al.

further does not disclose selecting a modulation scheme to achieve a desired bit error rate.

With respect to claim 65, Schreiber et al., in the field of communications, discloses a base station having a transceiver transmitting with enough power such that the transmission radius is more than one mile and less than ten **(See column 13 line 58 to column 14 line 17 and Figure 8 of Schreiber et al. for reference to cell coverage areas being several miles across to provide an acceptable signal to noise ratio as shown in Figure 8)**. Using a base station having a transceiver transmitting with enough power such that the transmission radius is more than one mile and less than ten miles has the advantage of providing a larger coverage area than a lower power transceiver such that signals may be sent and received over a greater distance.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Schreiber et al., to combine using a base station having a transceiver transmitting with enough power such that the transmission radius is more than one mile and less than ten miles, as suggested by Schreiber et al., with the system and method of Chambers et al., with the motivation being to provide a larger coverage area than a lower power transceiver such that signals may be sent and received over a greater distance.

With respect to claim 65, Engels et al. discloses a wireless communication system using OFDM in which non-line-of-sight antennas are used for radio transmissions in an indoor environment **(See the abstract and introduction sections**

of Engels et al. for reference to an OFDM indoor communication system that uses non-line-of-sight transmissions to base stations). Using an OFDM wireless communication system in which non-line-of-sight antennas are used for radio transmission in an indoor environment has the advantage of allowing transmitters to be more flexibly placed without having to provide a line-of-sight between the transmitters and the base stations.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Engels et al. to combine using an OFDM wireless communication system in which non-line-of-sight antennas are used for radio transmission in an indoor environment, as suggested by Engels et al., with the system and method of Chambers et al. and Schreiber et al., with the motivation being to allow transmitters to be more flexibly placed without having to provide a line-of-sight between the transmitters and the base stations.

With respect to claims 2 and 65, Although the combination of Chambers et al. and Schreiber et al. does not disclose a BER of 10x10^-6, choosing the BER of operation for a communication system is an obvious design choice that is made by the architect of the system. Vook et al., in the field of communications, suggest that lower bit error rate is more optimum and shows a BER of 10x10^-6 as optimum for a selected modulation scheme **(See page 608-610 and Figure 3 for reference to optimum BER approaching 10x10^-6)**. Having a lower BER has the advantage of having less corrupt packet data in the wireless network.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Vook et al., to combine the BER of 10x10^-6 as suggested by Vook et al., with the wireless system of Chambers et al. Schreiber et al. and Engel et al., with the motivation being to have less corrupt packet data in the network.

With respect to claim 3, Chambers et al. discloses using QPSK **(See column 7 lines 42-45 of Chambers et al. for reference to using QPSK)**.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers et al. in view of Schreiber et al. and Engel et al. as applied to claims 1, 5-6, and 64 above, and further in view of *Radio Resources Allocation in Fixed Broadband Wireless Networks* by Fong et al. from IEEE Transactions on Communications Vol. 46 No. 6.

With respect to claim 4, the combination of Chambers et al. Schreiber et al. and Engel et al. does not disclose channels of a first base station being reused by a second adjacent base station.

With respect to claim 4, Fong et al., in the field of communications, discloses reusing channels in adjacent base stations **(See page 806 right hand column of Fong et al. for reference to reusing channels in every cell, which includes adjacent cells)**. Reusing channels has the advantage of leaving more channels available for use in each base station.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Fong et al., to combine the reuse of channels in adjacent base stations, with the wireless system of Chambers et al. Schreiber et al. and Engel et al., with the motivation being to leave more channels available for use in each base station.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers et al. in view of Schreiber et al. and Engel et al. as applied to claims 1, 5-6, and 64 above, and further in view of Deutsche (GB 2319709).

With respect to claim 7, the combination of Chambers et al. Schreiber et al. and Engel et al. does not disclose an efficiency ratio being at least 0.75.

With respect to claim 7, Deutsche, in the field of communications, discloses an efficiency ratio of at least 0.75 **(See page 5 lines 6-7 of Deutsche for reference to an efficiency of about 0.75 bits/s/Hz per channel)**. Having a high efficiency ratio has the advantage of lowering the amount of transmitter power needed in a base station.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Deutsche, to combine the a system with an efficiency ratio of 0.75, with the wireless system of Chambers et al. Schreiber et al. and Engel et al., with the motivation being to lower the amount of transmitter power needed in a base station of the system.

9. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chambers et al. in view of Schreiber et al. as applied to claims 9-12 above, and further in view of Seazholtz et al. (U.S. Pat. 6246875).

With respect to claim 13, Chambers et al. discloses base stations, remote node transceivers 14, arranged in a cellular structure **(See column 3 lines 10-28 and item 14 in Figure 1 of Chambers et al. for reference to remote node transceivers arranged as cells in a network architecture)**. The remote node transceivers 14 must inherently emit a signal to be able to communicate with the subscriber stations 16. The subscriber stations 16 also must inherently register with the remote node transceivers in some way to be able to send data packets to the remote node transceivers 14. The combination of Chambers et al. and Schreiber et al. does not disclose CPE units registering with base stations based on signal quality of the signal from the base station units.

With respect to claim 14, the combination of Chambers et al. and Schreiber et al. does not disclose CPE units searching for and registering with a new base station based on signal quality upon losing signal quality with the current registered base station.

With respect to claim 16, the combination of Chambers et al. and Schreiber et al. does not disclose that when a CPE unit registers with a new base station unit, the new base station unit cause updating of the base station unit to which the CPE unit was previously registered, making it aware of the new registration.

With respect to claims 13-14 and 16, Seazholtz et al., in the field of communications, discloses a CPE, end user station, registering with a base station, mobile data base station, based on quality of the signal **(See column 34 lines 1-17 of Seazholtz et al. for reference to an end user station registering with a mobile data base station based on signal strength)**. Seazholtz et al. also discloses searching for and registering with a new base station when the current base station is losing signal quality **(See column 18 lines 23-51 of Seazholtz et al. for reference to handing off to a new base station when the signal of the current base station is weakening based on the signal strength of the new base station)**. Seazholtz et al. further discloses updating of a subscriber list to make base stations aware of a mobile unit registering with a new base station **(See column 19 lines 18-28 of Seazholtz et al. for reference to updating a SID list when mobiles units register with new stations)**. Registering with base stations based on signal quality and providing indication that a CPE unit has registered with a new base station has the advantage of improving system performance by making sure communications are made using the strongest possible signal and making sure that each base station in the system can accurately route packets to CPE units which have change the base station they are registered to.

It would have been obvious to one of ordinary skill in the art at the time of the invention, when presented with the work of Seazholtz et al. to combine register based on signal strength and making base station units aware of changing registrations, as suggested by Seazholtz et al., with the communications system of Chambers et al. and Schreiber et al., with the motivation being to improve system performance by making

sure communications are made using the strongest possible signal and making sure that each base station in the system can accurately route packets to CPE units which have change the base station they are registered to.

With respect to claim 15, the CPE units, subscriber stations 16 of Chambers et al., must inherently pass the address of the host connected to it to the base station unit, remote node transceiver 14, as with any network, so that the base station unit will be able to correctly route packets which are destined for the host address.

Response to Arguments

10. Applicant's arguments filed 8/30/06 have been fully considered but they are not persuasive.

In response to the Applicant's argument that Chambers, Schreiber, and Engels are directed to disparate wireless technologies, the Examiner respectfully disagrees. First it is noted that the combinations used in the rejections above are not combinations of the entire system disclosed by each of the reference, but rather combinations of the teachings of the references. For example, the Schreiber reference is used to show a teaching of a higher power transmitter using OFDM with a cell radius between 1 and 10 miles. It is the teaching of using higher power transmitters, not the entire system of Schreiber, which is combined with the system of Chambers. Further each of these references are from the same field of communications as each of them deal with

wireless communications using OFDM. Therefore, the references are not directed towards disparate wireless technologies.

In response to the Applicant's argument that there is no motivation to combine the teachings of Chambers, Schreiber, and Engels, the Examiner respectfully disagrees. A motivation to combine teaching of reference does not necessarily need to be found within the references themselves, but can also be found in the knowledge of one of ordinary skill in the art at the time of the invention. Regarding Schreiber, one of ordinary skill in the art at the time of the invention would have seen the advantage of using a higher power transmitter to provide a larger coverage area such that signals may be sent and received over a greater distance. Regarding Engels, one of ordinary skill in the art at the time of the invention would have seen the advantage of using indoor, non-line-of-sight antennas to allow transmitters to be more flexibly placed without having to provide a line-of-sight between the transmitters. Further these advantages are directly gained in the systems disclosed by Schreiber and Engels respectively. Therefore there is proper motivation to combine the reference as in the rejections above.

Further it is noted that many of the limitations of the dependent claims such as a 10x10^-6 bit error rate, an efficiency ration of at least 0.75, a signal to noise ratio of at least 5 dB, and at least 250 CPE units in each sector, (See claims 2, 7, 8, and 65) fall under the category of being obvious design choices. When setting up any communications system a system architect designs the system to operate under desired conditions. The references used in the rejections above to show these

limitations are used to show that these exact specifications have also been used in other systems. The claims are not directed toward any novel way of achieving these specific design specifications (for example there is no method of achieving a 10x10^-6 bit error rate, an efficiency ration of at least 0.75, a signal to noise ratio of at least 5 dB, and at least 250 CPE units in each sector cited in the claims or disclosed in the specification). Therefore, the references are used to point out that these characteristics are obvious design choices.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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